

REMARKS

This responds to the Office Action mailed April 14, 2005 in which claims 1-55 are currently pending. A Petition for a THREE MONTH extension of time and the appropriate fee accompanies this paper.

ART REJECTIONS

Claims 1-32 and 42-55 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Doerr, U.S. Patent No. 5,909,294 (hereafter “Doerr”) in view of Hsu, U.S. Patent No. 5,843,799 (hereafter “Hsu”).

Claims 33-41 were also rejected under 35 U.S.C. § 102(b) as anticipated by Hsu.

All of the rejections are respectfully traversed. Specifically, it is respectfully submitted that the Office Action statements regarding the disclosure of Hsu are in error. Similarly, Office Action statements regarding the disclosure of Doerr are also in error.

For the Examiner’s convenience, the rejections are all taken in the order raised and the particular problems with respect to each reference are addressed in that context.

Obviousness Rejections

Claims 1, 13, 14, 26 27, 42 and 52 have been rejected over the combination of Doerr and Hsu with the specific allegation that “Hsu, in the same field of optical devices, teaches a controller that can select which of the at least two optical devices in a group of devices will be active for a given time (Figure 4c, column 8 lines [sic] 41 – column 9 line 10).” This statement reflects a misunderstanding of Hsu and thus is erroneous for several reasons.

First, Hsu is not in the “same field of optical devices” as the instant invention – Hsu has nothing whatsoever to do with optical devices at all. The references to “transceivers” relates to bus transceivers that are used to drive electronic data signals over a bus. Indeed, the cited passage comes from a section entitled “Power Supply Switch Circuitry.” In reality, Hsu

describes a memory controller and bus architecture for connecting various types of memories.
(See e.g., col. 2, line 63-col. 3, line 7).

Second, nowhere in Hsu is there even a mention or suggestion of optical devices, let alone a teaching or suggestion of anything that would lead one to combine Hsu with Doerr for any relevant purpose, let alone in order to come up with an optical device such as claimed in any of claims 1, 13, 14, 26, 27, 42 or 52.

Third, the cited portion of the Hsu disclosure says nothing about selecting from among optical devices in a group, as noted above, it has nothing to do with optical devices at all.

Fourth, to the extent Hsu deals with redundancy, it does so in the context of testing for, permanent exclusion of, defective memory modules in order to form an overall working memory module.

With respect to Doerr, it is respectfully noted that Doerr does not use “groups” of redundant optical devices when that term is read in the context of the instant application. Doerr describes a “ping-pong” communication transceiver in which the device (element 102) switches back and forth between being a transmitter and being a receiver (an aspect tacitly recognized in the Office Action at the bottom of page 2). Doerr does not use redundancy – there is only one transmitter and one receiver and neither can function as the other.

Given the above, the Office Action’s conclusory assertion that “[o]ne skilled in the art would have been motivated to follow the disclosure of Hsu in the device of Doerr in order to select the amount of time that Doerr’s device acted as a transmitter and the amount of time the device of Doerr acted as a receiver” is improper and factually impossible. The statement is improper because the Office Action cites nothing as to what in Hsu or Doerr (or any other reference for that matter) that would have motivated one to act in accord with the statement. Such a conclusory statement, without backing, is prejudicial to applicant in this case. Putting

aside the factual problems with the disclosure of Hsu, absent a specific statement of what would have provided the motivation, the disconnect between the disclosure of Hsu and the instant invention renders it impossible to even guess the basis for the statement and thus, to address it beyond what has been stated above. In addition, the statement is irrelevant relative to the instant invention because controlling how long the Doerr device is a transmitter and how long it is a receiver has nothing to do with providing redundancy – the focus of the invention claimed in each and every pending claim.

Finally, in light of the above (and the true disclosure of Hsu) it is impossible to fathom how one could say that there is a reasonable likelihood that a combination of Doerr with Hsu would achieve the invention as claimed.

Accordingly, it is respectfully submitted that the Office has failed to establish even an arguable *prima facie* case for the obviousness of independent claims 1, 13, 14, 26, 42 or 52. As a result, those claims as well as every claim directly or indirectly dependent therefrom are allowable and the rejections should be withdrawn.

From the rejections, it seems that the Office is misunderstanding the concept of redundancy in the context of the instant application. To be clear, the redundancy is one of substitution of one device with another of the same type of device (i.e. like changing a light bulb when one fails or degrades to a point that the light output had degraded beyond a certain point with another of the same bulbs – such as replacing a 50 Watt frosted bulb with another 50 Watt frosted bulb), not switching back and forth between two different types of devices having differing purposes (i.e. transmitting vs. receiving). Any other understanding of redundancy (i.e. switching between transmitting and receiving) makes no sense. In a effort to unequivocally eliminate the possibility of the above apparent misunderstanding arising again, claim 1 has been amended to now recite “at least two of the multiple optical devices being of a common device

type and sharing a common contact so as to define a group”, claim 13 has been amended to refer to “a grouped set of redundant optical devices” and note that each device in the group shares “a data input in common”, claim 14 has been amended to recite that the relationship between the “at least two optical devices of the first type” have a relationship “such that at least one of the at least two optical devices can be automatically substituted for an other of the at least two optical devices when the other of the at least two optical devices is a bad device”, claim 26 has been amended to note that the optical devices are of a “common type”. It is respectfully submitted that these amendments have nothing to do with the deficiencies of the cited references, lack of a *prima facie* case – both rendering the unamended claims patentable without amendment -- or any other reason for patentability.

Moreover, the rejected claims are independently allowable based upon further aspects wholly missing from the cited references alone or in legitimate combination.

For example, claim 13 specifically, *inter alia*, recites “multiple lasers.” Doerr does not disclose lasers, it merely discloses light emitting diodes (LEDs) and Hsu, as noted above, has nothing to do with any kind of optical devices at all – Hsu exclusively relates to memory chips. Claim 13 further recites “the number of lasers being unequal to the number of detectors” an aspect wholly lacking from either reference or any legitimate combination one could create. Claim 13 also recites “the grouped set being defined by a grouping trench” an aspect similarly lacking from both references or any legitimate combination thereof.

Claim 14 recites “the at least two optical devices of the first type being related to each other by a common connection such that they can each receive a single source signal” an aspect wholly absent from both references or any combination thereof because, if one were to accept the Office Action position that the two devices (102) of Hsu share a common connection (101) they are not “of a first type” (i.e. the same kind of device) because one is an LED and the other is a

photodetector. Moreover, element 101 does not allow them to “each receive a single source signal” as recited in that claim. Even if one were to consider the LED 102 to be one of the “first type” devices and LED 102N to be another “first type” device the comparison falls apart because they do not share any “common connection” and the device of the “second type different from the first type” would have to be one of the Rx devices and they are not “configured for coupling to a second fiber.”

Claim 26 recites that one device in the group is “an active device and another of the optical devices in the group will be a backup optical device” an aspect not fairly taught or suggested by the cited references individually or in legitimate combination.

Amended claim 42 expressly recites “a number of semiconductor laser transmitters organized as a group defined by a grouping trench, at least some of the laser transmitters in the group being redundant for others of the laser transmitters in the group;” an aspect not fairly taught or suggested by the cited references individually or in legitimate combination.

Similarly, amended claim 52 expressly recites “active lasers” and “backup lasers” which are also not fairly taught or suggested by the cited references individually or in legitimate combination.

Still further, irrespective of the allowability of the independent claims, numerous dependent claims are independently allowable because the references do not teach or fairly suggest what the Office Action has alleged, rendering the rejections fatally flawed. Those rejections are dealt with below.

With respect to the rejection of claims 2, 15 and 28, the Office Action alleges that Doerr discloses a laser, citing reference item 401 of Fig. 4A and column 4, lines 40-67. The Office Action is in error and the rejection thus, improper. In Fig. 4A, item 401 is clearly labeled an “LED.” Moreover, the cited passage does not state what is alleged, but rather clearly states, “[i]n

the transmission mode the LED section 401 carries the modulation signal and acts as a conventional LED . . .” Withdrawal of the rejection of claims 2, 15 and 28 is respectfully requested.

With respect to claims 3, 4, 16 and 17 the Office Action is again in error, both for the lack of a “laser” in Doerr (the cited portions or elsewhere therein) and because the LEDs of Doerr are edge emitting (i.e. they are neither top nor bottom emitting) and there is nothing in Doerr to the contrary. Withdrawal of the rejection of claims 3, 4, 16 and 17 is respectfully requested.

With respect to claims 5, 6, 18, and 19, the Office Action is again in error. Nowhere in Doerr is there any mention, teaching or suggestion of distributed Bragg reflector lasers (a) because there are no lasers, and (b) because the grating present in Doerr is used simply for wavelength selection. Withdrawal of the rejection of claims 5, 6, 18 and 19 is respectfully requested.

With respect to claims 8, 9, 21 and 22, the Office Action is also in error. Like the LEDs, all of the photodetectors in Doerr are edge receiving. Withdrawal of the rejection of claims 8, 9, 21 and 22 is respectfully requested.

With respect to claims 11 and 24, as noted above, there is nothing that would lead one to combine Doerr and Hsu in a legally proper manner that would also satisfy the legal requirement that the combination would reasonably result in the claimed invention. Without belaboring the point about Hsu again, the Doerr system “ping-pongs” without resort to any components that might suggest the use of Hsu-like circuitry and the Hsu reference has nothing to do with, and bears no relation to, the subject matter of the instant claimed invention. Withdrawal of the rejection of claims 11 and 24 is respectfully requested.

With respect to claims 43-51, the Office Action correctly notes that “Hsu fails to specifically teach the specific number of transmitters and receivers claimed” but nevertheless relies upon “duplication of parts” law in rejecting the claims. These claims do not deal with mere duplication of parts, but rather the ratio of those devices more likely to fail (transmitters) to those devices less likely to fail (receivers) which, taken in combination with the independent claim’s recitation of redundancy for the transmitters adds a valuable and nonobvious aspect relating to increasing of up-time and to mean time between failures (MTBF). Withdrawal of the rejection of claims 43-51 is respectfully requested.

With respect to claim 53, it should be evident from the above that Hsu unquestionably does not teach or fairly suggest “a programmable laser selection control” as asserted by the Office Action and no legitimate combination of Doerr with Hsu would result in one. Withdrawal of the rejection of claim 53 is respectfully requested.

With respect to claims 54 and 55, it is respectfully submitted that the rejection is improper in that it does not even attempt to address the limitations specified by those claims. Claim 54 specifically recites “wherein the first transmitter further comprises transmitter failure detection sensor” and claim 55 specifically recites “an automatic failover circuit” and neither of which are disclosed in the cited passage of Hsu – both Hsu and Doerr lack any kind of sensor for failure detection during operation and have no provision for automatic failover. Withdrawal of the rejection of claims 54 and 55 is respectfully requested.

Anticipation Rejections

Claims 33-41 have been rejected as anticipated by Hsu. The rejection is specifically traversed for the reasons noted above including, at the most fundamental level, that Hsu lacks any optical devices at all and relates to memory chips and bus architecture.

Moreover, independent claim 33 specifically recites “forming grouping trenches” – *inter alia*, an aspect wholly absent from Hsu.

Independent claim 35 is a method claim and specifically requires not just optical devices but recovery from a failure involving “a failed optical device” and a “backup optical device” something Hsu does not do.

Dependent claim 36 further recites “monitoring an output of a laser to identify the optical device failure.” The Office Action fails to even acknowledge that limitation, let alone recognize that lack of any laser at all in Hsu.

The rejection of claim 37 ignores what the claim says, instead substituting something much more generic. Hsu does not disclose the aspect recited in the claim, namely, “accessing data in memory correlating the optical devices with activity information.” The Office Action similarly genericizes what is claimed in claims 38 and 40, ignoring what is actually claimed and what is clearly missing from Hsu.

Accordingly, it is respectfully submitted that none of claims 33-41 are anticipated by Hsu for these reasons and the anticipation rejection should be withdrawn.

Additional Claim Amendments

Certain of the claims have been amended beyond what is noted above. Those amendments have been introduced either for grammatical reasons or to reflect a change in the commercial focus of applicant’s business. It is respectfully submitted that none of the amendments add new matter or (unless specified) are being added for any patentability reason – the above setting forth, in detail, numerous bases for patentability that are wholly independent of any such amendments.

CONCLUSION

Based on the foregoing, reconsideration and allowance of this application is respectfully requested. In the event any issues remain that could potentially be resolved by telephone, the Examiner is urged to contact the undersigned at the number indicated below.

The Commissioner is authorized to charge any additional fees required for the extension of time or consideration of this Amendment on the merits to Deposit Account No. 13-4500, Order No. 4024-4008.

Respectfully submitted,

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